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ABSTRACT

The enrollment of women in higher education in relation to overall enrollment during the past decade is examined. For bachelor's, master's, doctoral, and first-professional degrees, the following are considered: the overall picture, representation of women among degree recipients by field of study for 1979 as compared with 1971; and the relative popularity of different fields of study for men and women, and how this changed between 1971 and 1979. Among the findings are the following: in 1979, women accounted for 48.3 percent of the bachelor's degrees, 49.1 percent of the master's degrees, 13.8 percent of the doctoral degrees, and 23.6 percent of the first-professional degrees; education continued to be the most popular degree field for women at the bachelor's, master's, and doctoral degree levels; for men, business and management was the most popular at the bachelor's and master's degree levels, while education was the most popular at the doctoral level. In addition, women continued to increase their representation in all eight of the first-professional fields, such as medicine and law, in which trends could be measured, but they are still a definite minority in all of these fields. (SW)

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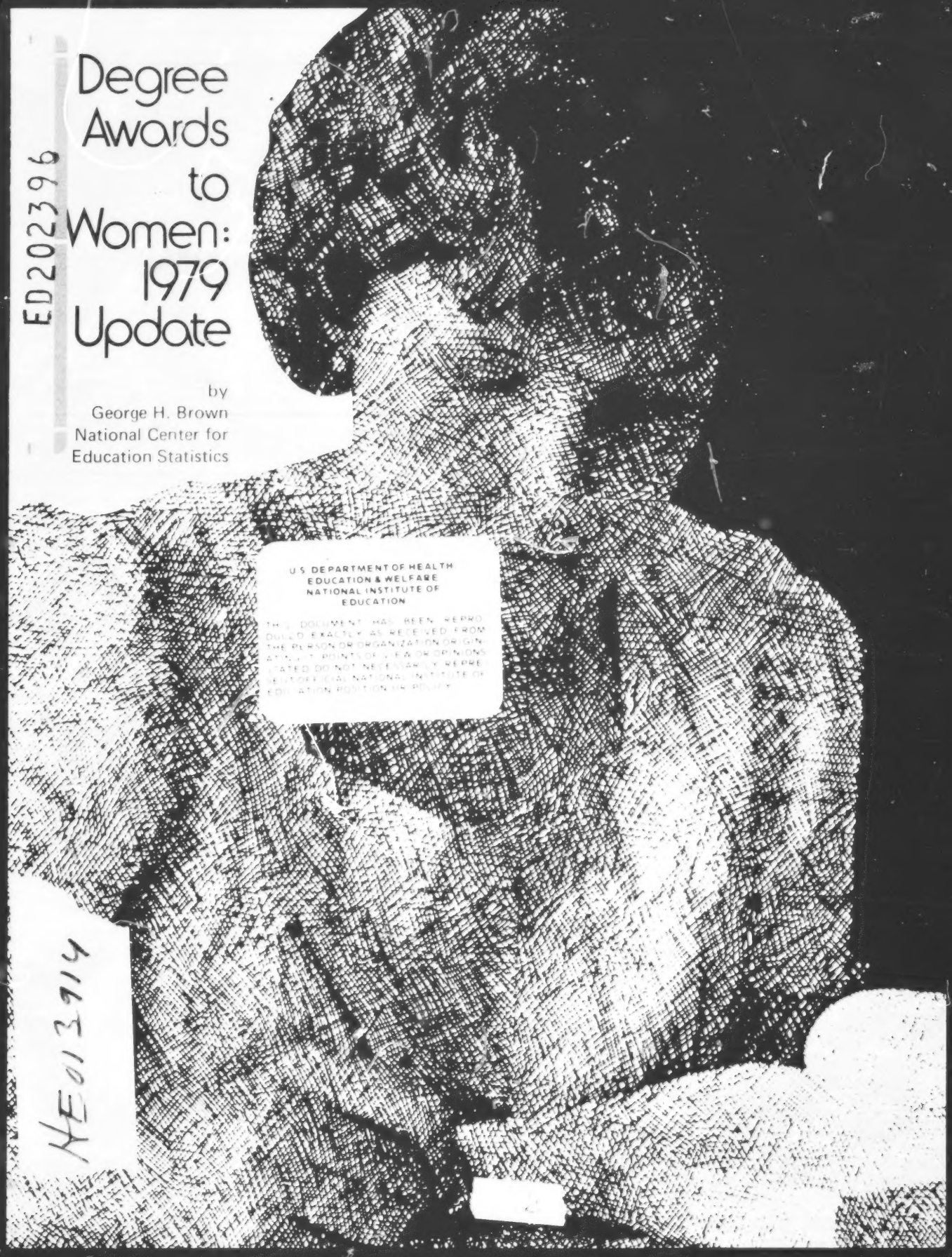
Degree Awards to Women: 1979 Update

by
George H. Brown
National Center for
Education Statistics



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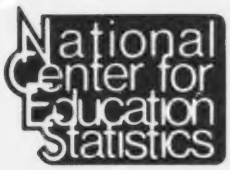

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FOREWORD

In recent years, NCES has published several reports describing the changes which have been taking place in the representation of women among recipients of bachelor's, master's, doctoral, and first-professional degrees. In each report, the base year from which changes were reckoned was 1970-71, the first year that information was available using the current taxonomy of instructional programs. The first report (actually a set of four small reports) examined changes as of 1975-76 while the second report examined changes evident in 1976-77. The present report examines changes evident in 1978-79.

The data on which this report is based were collected through the annual Survey of Degrees and Other Formal Awards Conferred (part of the Higher Education General Information Survey (HEGIS)).

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January 1981

FOR MORE INFORMATION

Materials concerning the Center's statistical program and a catalog of NCES publications may be obtained from the Statistical Information Office, National Center for Education Statistics, (Presidential Building), 400 Maryland Avenue SW., Washington, D.C. 20202, telephone (301) 436-7900.

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HIGHLIGHTS

- In 1979, women accounted for 48.3 percent of the bachelor's degrees, 49.1 percent of the master's degrees, 13.8 percent of the doctoral degrees, and 23.6 percent of the first-professional degrees.

- At both the bachelor's and master's degree levels, women continued to show their greatest increases in those fields in which they have traditionally had small representation, e.g., business and management where they received 30.7 percent of the bachelor's degrees in 1979. Their representation in traditionally female fields such as home economics and letters remained virtually unchanged.

- At the doctoral degree level, women's gains were greatest in the traditionally female fields and least in the traditionally non-female fields.

- Education continued to be the most popular degree field for women at the bachelor's, master's, and doctoral degree levels. For men, business and management was the most popular at the bachelor's and master's degree levels while education was the most popular at the doctoral level.

- Women continued to increase their percentage representation in all eight of the first-professional fields, such as medicine and law, in which trends could be measured, but they are still a definite minority in all of these fields.

- The two fields of law and medicine together account for 83 percent of all first-professional degrees awarded to women, and for 69.5 percent of all those awarded to men.

1/ In this report, academic years are referred to by their terminal year. For example, 1978-79 is referred to as 1979.

CHAPTER I

INTRODUCTION

As a context for viewing changes in the representation of women among degree recipients, it may be of interest to briefly examine overall enrollment and the enrollment of women in institutions of higher education over the past decade.

In 1971, total college enrollment was about 8.6 million, of which 41.3 percent were women. In 1980, total enrollment was up to 11.7 million,[1/] and women accounted for slightly over half of this total (50.7 percent). These numbers represent a 35 percent increase in total enrollment but a 67 percent increase in enrollment of women. Clearly the increased participation of women in higher education has been a major aspect of the overall growth in college enrollments.

Degree awards to women have also risen greatly. The total number of degrees, bachelor's or higher, awarded to women was 467,641 (40.1 percent) in 1971 and 623,763 (46.7 percent) in 1979. This represented an increase of 33.4 percent in degree awards to women.

The following chapters are devoted to bachelor's, master's, doctoral, and first-professional degrees, respectively. Each chapter consists of: (a) an overview; (b) an examination by field of study of the percentage representation of women among degree recipients in 1979 as compared with 1971; and (c) an examination of the relative popularity of different fields of study for men and for women, and how this changed between 1971 and 1979.

1/ Based on enrollment data collected by NCES in fall 1980.

CHAPTER II

BACHELOR'S DEGREES

Overview

In 1971, there was a total of about 2.9 million women enrolled in undergraduate instruction in the United States.[1/] They accounted for 42.1 percent of total undergraduate enrollment. In 1979, the number of women undergraduates had increased to 4.4 million, or 50.3 percent of total undergraduate enrollment. This growth in female enrollment amounts to 49 percent.

In keeping with the enrollment growth, there was a corresponding growth in the number of bachelor's degrees awarded to women. Between 1971 and 1979 the number of women receiving a bachelor's degree increased from 367,678 to 449,946 -- a gain of 22 percent. If these degrees to women are expressed as percentages of all bachelor's degrees awarded, we find that women accounted for 43.3 percent of the total in 1971, and 48.3 percent of the total in 1979. When the year-by-year data are examined (see Appendix A), it is evident that the women's percentage representation increased every year from 1971 through 1979. In 1979, for the first time, women accounted for more than half of total enrollment.

Field of Study

Table 1 shows the percentage representation of women among bachelor's degree recipients in 1971 and 1979, categorized by discipline division, i.e., by field of study. The general picture that emerges from table 1 is that the trends evident in our previous reports on this topic are continuing and are becoming somewhat stronger. Women still account for more than half the degrees awarded in traditionally female fields: area studies, education, fine and applied arts, foreign languages, health professions, home economics, letters, and library science. There are two additional fields, not traditionally female, in which women now predominate. These are psychology, in which women accounted for 61.3 percent of the degrees awarded, and public affairs and services with 53.5 percent. Interdisciplinary studies, at 49.9 percent, almost qualified as a new predominantly female field. The 1979 data show that slight declines occurred for women in three traditionally female fields: education, home economics, and letters.

1/ Here and throughout this report, statements about the number of degrees awarded refer to the aggregate United States, which includes outlying territories such as Guam and Puerto Rico. These outlying territories account for less than 1 percent of the total number of degrees awarded.

Table 1. --Percentage of women among bachelor's degree recipients, by discipline division: Aggregate United States, 1971 and 1979

Discipline division	1971		1979		Percentage point change
	Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women	
All discipline divisions...	846,110	43.4	931,340	48.3	4.9
Agriculture and natural resources	12,710	4.2	23,247	27.1	22.9
Architecture and environmental design	5,578	12.0	9,297	25.8	13.8
Area studies	2,497	52.9	2,602	58.2	5.3
Biological sciences	36,033	29.3	49,567	40.6	11.3
Business and management	116,709	9.3	175,420	30.7	21.4
Communications	10,802	35.3	26,470	49.9	14.6
Computer and information sciences	2,388	13.6	8,769	28.1	14.5
Education	177,638	74.4	127,853	73.2	-1.2
Engineering	50,357	.8	62,800	8.3	7.5
Fine and applied arts	30,447	59.7	41,012	62.5	2.8
Foreign languages	20,433	74.8	12,034	76.0	1.2
Health professions	25,484	77.2	62,723	82.0	4.8
Home economics	11,271	97.3	18,457	95.2	-2.1
Law	545	5.0	678	40.4	35.4
Letters	73,398	61.0	42,368	58.0	-3.0
Library science	1,013	92.0	558	94.6	2.6
Mathematics	24,918	38.1	11,901	41.7	3.6
Military science	357	.3	347	3.5	3.2
Physical sciences	21,549	14.0	23,363	22.6	8.6
Psychology	38,154	44.7	43,012	61.3	16.6
Public affairs and services...	9,303	49.1	38,799	53.5	4.4
Social sciences	156,698	37.0	109,362	42.0	5.0
Theology	3,744	27.2	6,118	25.6	-1.6
Interdisciplinary studies.....	14,084	29.2	34,574	49.9	20.7

To what extent are women entering traditionally male fields? If we define these as fields in which women accounted for less than 20 percent of the degree awards in 1971, their representation in these fields in 1979 is as follows:

	Percent
Agriculture and natural resources	27.1
Architecture and environmental design	25.8
Business and management	30.7
Computer and information sciences	28.1
Engineering	8.3
Law (not the L.L.B.)	40.4
Military science	3.5
Physical sciences	22.6

In all of these fields, except engineering and military science, women accounted for more than 20 percent of the degree awards in 1979. It is also noteworthy that even in engineering women went from .8 percent of the degree awards in 1971 to 8.3 percent in 1979. Probably the most impressive gain was that shown for business and management -- from 9.3 percent in 1971 to 30.7 percent in 1979.

In each of our previous reports in this series (1976 and 1977) we have shown an inverse relationship between the size of the women's representation in 1971, and the amount of gain evident in the later year. The following tabulation groups the various discipline divisions on the basis of women's percentage representation in 1971 and shows the average percentage point change evident in the 1979 data. Again we see that women made their greatest gains in those fields where traditionally they have been least represented. In the traditionally female fields, the changes were trivial.

Women's percentage representation in 1971	Discipline division	Average percentage point change in 1979
80-99	Home economics, library science	+.2
60-79	Education, foreign languages, health professions, letters	+.4
40-59	Area studies, fine and applied arts, psychology, public affairs and services	+7.3
20-39	Biological sciences, communications, interdisciplinary studies, mathematics, social sciences, theology	+8.9
0-19	Agriculture and natural resources, architecture and environmental design, business and management, computer and information sciences, engineering, law, military science, physical sciences	+15.9

Relative Popularity of Different Fields

In this section we examine the distribution of women bachelor degree recipients across fields of study (see table 2). We shall note the extent to which they are concentrated in relatively few fields or spread out over many. For comparison purposes, distribution data are presented for both of the years 1971 and 1979 and for both men and women.

It is evident in table 2 that education continues to be the most popular field for women. It accounted for 21 percent of all bachelor's degree awards to women in 1979. This was down appreciably from the 36 percent value it held in 1971. This decline is probably attributable both to the continuing slump in the market demand for teachers and to various sociocultural forces encouraging women to broaden their aspirations to include fields other than those that are traditionally female.

It is interesting to note that business and management, which traditionally has been regarded as a men's field, now ranks second in popularity among women. It ranked ninth in the 1971 data. In 1971, the six top ranking fields for women accounted for about 79 percent of women's degrees. In 1979, the corresponding percentage was 66. Thus, there is a slow but continuing increase in the diversification of women's fields of study.

Turning our attention to the men's data in table 2 we see that business and management continued to be the most popular degree field for men, accounting for 25 percent of all men's degrees (it was 22 percent in 1971). The second most popular field for men was social sciences at 13.2 percent, closely followed by engineering at 12.0 percent.

In 1979, for the first time, women appeared to be slightly more diversified than men in their choice of degree field. The six top ranking fields for women accounted for 66 percent of all degrees award to women in 1979. The analogous index for men was 67.4 percent.

Table 2. --Distribution of bachelor's degrees, by sex and discipline division: Aggregate United States, 1971 and 1979

Discipline division	Percentage of degrees awarded			
	Women		Men	
	1971	1979	1971	1979
All discipline divisions	100.0	100.0	99.9	99.9
Agriculture and natural resources	.1	1.4	2.5	3.5
Architecture and environmental design	.2	.5	1.0	1.4
Area studies	.4	.3	.2	.2
Biological sciences	2.9	4.5	5.3	6.1
Business and management	2.9	12.0	22.1	25.2
Communications	1.0	2.9	1.5	2.8
Computer and information sciences	.1	.5	.4	1.3
Education	36.0	20.8	9.5	7.1
Engineering	.1	1.2	10.4	12.0
Fine and applied arts	4.9	5.7	2.6	3.2
Foreign languages	4.2	2.0	1.1	.6
Health professions	5.4	11.4	1.2	2.3
Home economics	3.0	3.9	.1	.2
Law	(*)	.1	.1	.1
Letters	12.2	5.5	6.0	3.7
Library science	.3	.1	(*)	(*)
Mathematics	2.6	1.1	3.2	1.4
Military science	(*)	(*)	.1	.1
Physical sciences	.8	1.2	3.9	3.8
Psychology	4.6	5.9	4.4	3.5
Public affairs and services	1.2	4.6	1.0	3.7
Social sciences	15.8	10.2	20.6	13.2
Theology	.3	.4	.6	.9
Interdisciplinary studies	1.1	3.8	2.1	3.6

*Less than .05 percent.
NOTE: Totals may not add to 100.0 percent because of rounding.

CHAPTER III

MASTER'S DEGREES

Overview

In 1971 there was a total of 405,109 women enrolled in graduate instruction in the United States. They accounted for 38.9 percent of total graduate enrollment. In 1979 the number of women graduate students had increased to 499,885 or 46.1 percent of total graduate enrollment. This growth in women's enrollment amounted to an increase of 23.4 percent. Over the same time period, total male enrollment in graduate school decreased by 8 percent.

As would be expected, the number of women receiving a master's degree also increased over this span of time, from 92,896 to 148,303 (a 59.6 percent gain). If the degrees awarded to women are expressed as percentages of all master's degrees awarded, we find that women accounted for 40.1 percent of the total in 1971, and 49.1 percent of the total in 1979.[1/] Thus, while there was a large gain (about 60 percent) in the number of women receiving a master's degree, the women's proportion of all master's degrees awarded increased by only 9 percentage points.

Field of Study

Between 1971 and 1979, women increased their percentage representation in all but three fields: home economics (-2.7 percent), library science (-.9 percent), and military science (which was unchanged at 0 percent). Table 3 shows the percentage representation of women among master's degree recipients in 1971 and 1979, categorized by discipline division. The table also shows the changes in percentage points for each of the 24 fields.

The 1971 data show women predominating in six fields: education, foreign languages, health professions, home economics, letters, and library science. In 1979, women still predominated in these fields plus two others: fine and applied arts (53.9 percent) and psychology (54.1 percent). So women now predominate in psychology both at the bachelor's and master's degree levels.

[1/] Degree award data for the intervening years are presented in Appendix B.

Table 3. --Percentage of women among master's degree recipients, by discipline division: Aggregate United States, 1971 and 1979

Discipline division	1971		1979		Percentage point change
	Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women	
All discipline divisions ...	231,486	40.1	302,075	49.1	9.0
Agriculture and natural resources	2,458	5.9	4,007	20.2	14.3
Architecture and environmental design	1,724	14.1	3,124	28.5	14.4
Area studies	1,017	39.0	773	49.0	10.0
Biological sciences	5,756	33.8	6,879	37.7	3.9
Business and management	26,654	3.9	50,646	19.1	15.2
Communications	1,856	34.6	2,882	48.5	13.9
Computer and information sciences	1,588	10.3	3,055	18.8	8.5
Education	89,067	52.2	111,834	68.6	16.4
Engineering	16,457	1.1	15,510	6.1	5.0
Fine and applied arts	6,678	47.4	8,524	53.9	6.5
Foreign languages	4,779	65.4	2,440	69.6	4.2
Health professions	5,902	55.4	15,637	71.1	15.7
Home economics	1,453	93.9	2,520	91.2	-2.7
Law	955	4.8	1,647	15.5	10.7
Letters	12,743	57.5	8,924	61.3	3.8
Library science	7,028	81.3	5,930	80.4	-.9
Mathematics	5,201	29.3	3,046	34.7	5.4
Military science	2	0	38	0	0
Physical sciences	6,386	13.4	5,464	18.2	4.8
Psychology	4,478	37.2	8,031	54.1	16.9
Public affairs and services ...	8,406	48.8	20,101	50.8	2.0
Social sciences	16,522	28.3	12,919	35.3	7.0
Theology	2,710	24.4	3,558	32.0	7.6
Interdisciplinary studies	1,706	35.2	4,586	38.8	3.6

To reveal generalizations about the kinds of fields in which women are increasing their representation most rapidly, we again grouped the various fields on the basis of women's percentage representation in 1971, and the average change evident in 1979 was computed for each group. The results were as follows:

Women's percentage representation in 1971	Discipline division	Average percentage point change in 1979
80-99	Home economics, library science	-1.8
60-79	Foreign languages	4.2
40-59	Education, fine and applied arts, health professions, letters, public affairs and services	8.9
20-39	Area studies, biological sciences, communications, mathematics, psychology, social sciences, theology, interdisciplinary studies	8.5
0-19	Agriculture and natural resources, architecture and environmental design, business and management, computer and information sciences, engineering, law	11.3

1/ Military science was omitted from these calculations because of its extremely small size. There were 2 degrees in this field in 1971 and 38 in 1979.

Again, as in our earlier reports, we see slight declines in the traditionally female fields of home economics and library science. Also, a tendency is clearly apparent for women's percentage representation to have increased most in those fields in which, in 1971, women were least represented.

Relative Popularity of Different Fields

Education continues to be the most popular master's degree field for women; it accounted for slightly more than half of all master's degrees awarded to women both in 1971 and 1979. No other field accounted for more than 8 percent. Prior to 1979, education was the most popular master's degree field for men also, but in 1979, education was displaced by business and management as the most popular field for men (26.6 percent). Table 4 shows how the master's degrees awarded to women were distributed across the various fields, both in 1971 and 1979. For comparison purposes, analogous data are presented for men.

Table 4. --Distribution of master's degrees, by sex and discipline division: Aggregate United States, 1971 and 1979

Discipline division	Percentage of degrees awarded			
	Women		Men	
	1971	1979	1971	1979
All discipline divisions	99.9	99.8	100.0	99.9
Agriculture and natural resources	.2	.5	1.7	2.1
Architecture and environmental design	.3	.6	1.1	1.5
Area studies	.4	.3	.4	.2
Biological sciences	2.1	1.7	2.8	2.8
Business and management	1.1	6.5	18.5	26.6
Communications	.7	.9	.9	1.0
Computer and information sciences	.2	.4	1.0	1.6
Education	53.8	51.7	28.2	22.8
Engineering	.2	.6	11.7	9.5
Fine and applied arts	3.4	3.1	2.5	2.6
Foreign languages	3.4	1.1	1.2	.5
Health professions	3.5	7.5	1.0	2.9
Home economics	1.5	1.5	.1	.1
Law	(*)	.2	.7	.9
Letters	7.9	3.7	3.9	2.2
Library science	6.1	3.2	.9	.8
Mathematics	1.6	.7	2.7	1.3
Military science	0	0	(*)	(*)
Physical sciences	.9	.7	4.0	2.9
Psychology	1.8	2.9	2.0	2.4
Public affairs and services	4.4	6.9	3.1	6.4
Social sciences	5.1	3.1	8.5	5.4
Theology	.7	.8	1.5	1.6
Interdisciplinary studies	.6	1.2	.8	1.8

*Less than .05 percent.
Note: Totals may not add to 100.0 percent because of rounding.

The five top ranking fields for women were: education (51.7 percent), health professions (7.5 percent), public affairs and services (6.9 percent), business and management (6.5 percent), and letters (3.7 percent). For men, the five top ranking fields were: business and management (26.6 percent), education (22.8 percent), engineering (9.5 percent), public affairs and services (6.4 percent), and social sciences (5.4 percent).

CHAPTER IV

DOCTORAL DEGREES

Overview

As mentioned in the previous chapter, between 1971 and 1979 women's enrollment in graduate school increased about 23 percent, while men's enrollment decreased by 8 percent. In this chapter we examine the pattern of doctoral degree awards to women over this time period.

The number of women receiving doctoral degrees increased from 4,579 in 1971 to 9,201 in 1979 -- an increase of 101 percent. For comparison purposes we might note that over the same time period the number of men receiving a doctoral degree decreased from 27,534 in 1971 to 23,555 in 1979, a decrease of 14.4 percent.

In 1971 women accounted for 14.3 percent of all doctoral degrees awarded; in 1979 they accounted for 28.1 percent, a gain of 13.8 percentage points. (Degree award data for the intervening years are presented in Appendix C.)

Field of Study

Table 5 shows the percentage representation of women among doctoral degree recipients in 1971 and 1979, categorized by discipline division. The table also shows the percentage point change for each field between these two points in time.

In 1971 women predominated in only one field: home economics. In 1979, as in 1977 and 1976, they predominated in three fields: home economics, foreign languages, and library science. These, of course, are traditionally female fields and they are quite small; together they accounted for a grand total of only 930 doctoral degrees in 1979.

Again, as in our earlier reports on this topic, we find at least nominal increases in the percentages of women awarded doctoral degrees for all 23 fields between 1971 and the later year. The largest increase was for library science, from 28.2 percent to 51.4 percent. It may be worth noting that two years previously women accounted for a percentage of the library science doctorates somewhat higher than 51 percent. Conceivably, women's dominance in this field is beginning to decline. Actually, there are three other fields in which women showed a slight decline from two years previously: home economics, public affairs and services, and interdisciplinary studies.

Table 5. --Percentage of women among doctoral degree recipients, by discipline division: Aggregate United States, 1971 and 1979

Discipline division	1971		1979		Percentage point gain
	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women	
All discipline divisions	32,113	14.3	32,756	28.1	13.8
Agriculture and natural resources	1,086	2.9	950	7.7	4.8
Architecture and environmental design	36	8.3	96	22.9	14.6
Area studies	149	17.4	133	36.1	18.7
Biological sciences	3,645	16.3	3,548	25.6	9.3
Business and management	810	2.8	863	11.7	8.9
Communications	145	13.1	192	28.1	15.0
Computer and information sciences	128	2.3	236	12.7	10.4
Education	6,398	21.2	7,731	42.2	21.0
Engineering	3,638	.6	2,506	3.3	2.7
Fine and applied arts	621	22.2	700	35.1	12.9
Foreign languages	781	38.0	641	53.8	15.8
Health professions	466	16.5	718	36.8	20.3
Home economics	123	61.0	219	67.6	6.6
Law	20	0	46	15.2	15.2
Letters	2,416	23.5	1,930	40.9	17.4
Library science	39	28.2	70	51.4	23.2
Mathematics	1,199	7.8	730	16.7	8.9
Physical sciences	4,391	5.6	3,104	11.3	5.7
Psychology	1,782	24.0	2,674	40.1	16.1
Public affairs and services	178	24.2	368	30.2	6.0
Social sciences	3,659	13.9	3,360	25.8	11.9
Theology	312	1.9	1,232	4.6	2.7
Interdisciplinary studies	91	15.4	709	28.9	13.5

As before, the 23 fields are grouped below on the basis of women's percentage representation in 1971 and the average percentage point change evident in 1979 is indicated.

Women's percentage representation in 1971	Discipline division	Average percentage point change in 1971
30 or more	Foreign languages, home economics	+11.2
20 - 29.9	Education, fine and applied arts, letters, library science, psychology, public affairs and services	+16.1
10 - 19.9	Area studies, biological sciences, communications, health professions, social sciences, inter-disciplinary studies	+14.7
Less than 10	Agriculture, architecture and environmental design, business and management, computer sciences, engineering, law, mathematics, physical sciences, theology	+8.2

Although with respect to bachelor's and master's degrees we found an inverse relationship between the percentage representation of women in 1971, and the average gain in percentage points evident in 1979, there is no clear trend of this sort in the doctoral degree data. Just as in earlier reports we continue to find that women made their greatest gains at the doctoral level in fields where they have traditionally been relatively strongly represented. The situation described in this paragraph was also observed and noted in our first report in this series -- pertaining to 1976 data. Evidently, when women aspire to the highest academic degree, the doctorate, they still tend to select the traditionally feminine fields.

Relative Popularity of Different Fields

In 1979, education was still the most popular field for both men and women (table 6); it accounted for about a third of all doctoral degrees awarded to women and about a fifth of all those awarded to men. Psychology ranked second in popularity with women and sixth with men. (These generalizations are very similar to those made about the analogous tables in our earlier reports.)

Five fields appeared among the top six for both women and men. These were: education, psychology, biological sciences, social sciences, and physical sciences. Also appearing in the top six for women was the traditionally female field of letters; and in the top six for men was the traditionally male field of engineering.

Table 6. --Distribution of doctoral degrees, by sex and discipline division: Aggregate United States, 1971 and 1979

Discipline division	Percentage of degrees awarded			
	Women		Men	
	1971	1979	1971	1979
All discipline divisions	100.0	99.9	100.0	100.0
Agriculture and natural resources	(*)	.8	3.8	3.7
Architecture and environmental design	(*)	.2	(*)	.3
Area studies	(*)	.5	(*)	.4
Biological sciences	13.0	9.9	11.1	11.2
Business and management	(*)	1.1	(*)	3.2
Communications	(*)	.6	(*)	.6
Computer and information sciences	(*)	.3	(*)	.9
Education	29.6	35.5	18.3	19.0
Engineering	(*)	.9	13.1	10.3
Fine and applied arts	3.0	2.7	1.7	1.9
Foreign languages	6.4	3.7	1.7	1.3
Health professions	1.7	2.9	1.4	1.9
Home economics	1.6	1.6	(*)	.3
Law	0	.1	(*)	.2
Letters	12.4	8.6	6.7	4.8
Library science	(*)	.4	(*)	.1
Mathematics	2.0	1.3	4.0	2.6
Physical sciences	5.3	3.8	15.0	11.7
Psychology	9.3	11.6	4.9	6.8
Public affairs and services	(*)	1.2	(*)	1.1
Social sciences	11.0	9.4	11.4	10.6
Theology	(*)	.6	1.0	5.0
Interdisciplinary studies	(*)	2.2	(*)	2.1

*Less than 0.5 percent
Note: Totals may not add to 100.0 percent because of rounding.

CHAPTER V

FIRST-PROFESSIONAL DEGREES

Overview

A first-professional degree is defined as one which meets all three of the following criteria: (1) it signifies completion of the academic requirements to begin practice in the profession; (2) it is based on a program which requires at least 2 years of college work prior to entrance; and (3) it requires a total of at least 6 academic years of college work to complete the degree program, including prior required college work plus the length of the professional curriculum itself. This chapter examines changes which took place between 1971 and 1979 in the representation of women among recipients of first-professional degrees. Degree award data for the years 1972 through 1978 are presented in Appendix D.

Traditionally, NCES had collected data on degree awards in eight professions: dentistry, medicine, optometry, osteopathic medicine, podiatry, veterinary medicine, law, and theology. The small number of degrees awarded in other professions were grouped into an "other" category. Starting in 1976, pharmacy and chiropractic were removed from the "other" category and given individual reporting status. It is obviously not possible to include these two professions when comparing the data for 1971 and 1979.

In 1971 there were 15,007 women enrolled in first-professional schools. They accounted for 8.6 percent of total enrollment in such schools. In 1979, the number of women so enrolled was 65,216, or 25.2 percent of the total. This growth in female enrollment amounted to a 334 percent increase!

The number of women who received a first-professional degree in 1971 was 2,479, and in 1979, was 16,313 -- an increase of 558 percent!! Thus it is clear that women have achieved a spectacular increase in their representation among recipients of first-professional degrees.

Field of Study

It is clear that women made substantial gains in all fields on which trends could be examined (see table 7). By 1979 they were most highly represented in pharmacy (36.0 percent), veterinary medicine (28.9 percent), and law (28.5 percent). Most impressive of these three is law since that is such a large field. In 1979 alone, over 10,000 women received a law degree.

Women are becoming increasingly prominent in the profession of pharmacy. It should be noted, however, that pharmacy as a first-professional degree field, is a very small field; only 639 doctor of pharmacy degrees were awarded in 1979. Most pharmacists enter that profession by another route: a bachelor's degree followed by apprenticeship. In 1979, a total of 6,919 bachelor's degrees in pharmacy were awarded, of which 39.9 percent went to women. Thus, via both routes, women are greatly increasing their representation in this profession.

The largest gain made by women between 1971 and 1979 was in law. They accounted for only 7.3 percent of the law degrees awarded in 1971 but 28.5 percent in 1979 -- a gain of 21.2 percentage points. Substantial gains were also made in veterinary

Table 7. --Percentage of women among first-professional degree recipients, by field of study: Aggregate United States, 1971 and 1979

Field of study	1971		1979		Percentage point change
	Total first-professional degrees awarded	Percent awarded to women	Total first-professional degrees awarded	Percent awarded to women	
Total	38,276	6.5	69,222	23.6	17.1
Chiropractic (D.C.)	---	---	1,779	10.6	---
Dentistry (D.D.S. or D.M.D.)	3,777	1.2	5,488	11.9	9.4
Law, general (L.L.B. or J.D.)	17,652	7.3	35,387	28.5	21.2
Medicine (M.D.)	8,986	9.2	14,925	23.1	13.9
Optometry (O.D.)	531	2.4	1,046	13.0	10.6
Osteopathic medicine (D.O.)	472	2.3	1,065	15.7	13.4
Pharmacy (D. Pharm.)	---	---	639	36.0	---
Podiatry or podiatric medicine (Pod. D.)	240	2.1	572	7.2	5.1
Theological professions, general	5,055	2.3	6,607	13.1	10.8
Veterinary medicine (D.V.M.)	1,252	7.8	1,714	28.9	21.1
Other	311	21.2	---	---	---

Note: Absence of data is denoted by ---.

medicine (21.1 percentage points), medicine (13.9 percentage points), and osteopathic medicine (13.4 percentage points).

Relative Popularity of Different Fields

Not surprisingly, law is by far the most popular professional field for women -- accounting for 61.8 percent of all first-professional degrees to women (see table 8). The only other field accounting for a substantial fraction of the women's degrees is medicine at 21.2 percent. Law and medicine together account for 83.0 percent of all the first-professional degrees awarded to women. The other fields account for very small percentages.

The men's data yield a rather similar picture. Law is the most popular field (47.8 percent) with medicine ranking second (21.7 percent). These two fields together account for 69.5 percent of first-professional degrees to men. It appears that law is more popular among women than among men while dentistry is more popular among men than among women.

Table 8. --Distribution of first-professional degrees, by sex and field of study: Aggregate United States, 1971 and 1979

Field of study	Percentage of degrees awarded			
	Women		Men	
	1971	1979	1971	1979
Total	100.0	100.0	100.0	100.0
Chiropractic (D.C.)	---	1.2	---	3.0
Dentistry (D.D.S. or D.M.D.)	1.8	4.0	10.4	9.1
Law, general (L.L.B. or J.D.)	52.2	61.8	45.7	47.8
Medicine (M.D.)	33.4	21.2	22.8	21.7
Optometry (O.D.)	.5	.8	1.4	1.7
Osteopathic medicine (D.O.)	.4	1.0	1.3	1.7
Pharmacy (D. Pharm.)	---	1.4	---	.8
Podiatry or podiatric medicine (Pod. D.)	.2	.3	.7	1.0
Theological professions, general	4.8	5.3	13.8	10.9
Veterinary medicine (D.V.M.)	4.0	3.0	3.2	2.3
Other	2.7	0	.7	0

Note: Absence of data is denoted by ---.

APPENDIXES

Appendix A.--Percentage of women among bachelor's degree

Discipline division	1971-72		1972-73		1973-74	
	Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women
All discipline divisions	894,110	43.7	930,272	43.9	954,376	44.4
Agriculture and natural resources	13,560	5.5	14,819	7.4	16,303	9.7
Architecture and environmental design	6,452	12.0	6,980	13.2	7,840	14.8
Area studies	2,797	52.5	3,080	52.3	3,203	54.3
Biological sciences	37,638	29.6	42,672	30.1	48,856	31.5
Business and management	123,306	9.7	128,244	10.8	133,905	13.1
Communications	12,340	35.5	14,317	36.6	17,096	38.4
Computer and information sciences	3,402	13.6	4,305	14.9	4,757	16.4
Education	192,368	74.1	195,640	73.5	186,623	73.5
Engineering	51,465	1.0	51,613	1.2	50,693	1.6
Fine and applied arts	33,886	59.9	36,109	60.4	40,016	60.2
Foreign languages	19,359	75.1	19,502	76.0	19,479	76.4
Health professions	28,893	75.7	33,932	77.0	41,869	77.4
Home economics	12,165	96.5	13,640	96.3	15,433	96.4
Law	503	6.6	474	8.4	494	10.5
Letters	73,556	60.1	71,298	58.9	65,325	58.0
Library science	989	93.3	1,160	94.4	1,164	92.6
Mathematics	23,848	39.1	23,223	40.2	21,813	41.0
Military science	379	0	272	0	328	0.3
Physical sciences	20,887	15.1	20,809	15.0	21,287	16.6
Psychology	43,421	46.4	48,096	47.8	52,256	50.5
Public affairs and services	12,746	47.9	18,009	46.9	24,264	43.5
Social sciences	159,594	36.3	157,702	36.3	152,203	36.6
Theology	3,882	27.8	3,548	25.7	4,231	28.1
Interdisciplinary studies	16,674	31.1	20,810	34.1	24,938	37.1

recipients, by discipline division: 1971-72 through 1977-78

1974-75		1975-76		1976-77		1977-78	
Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women	Total bachelor's degrees awarded	Percent awarded to women
931,663	45.4	934,443	45.6	928,256	46.2	930,201	47.2
17,573	14.1	19,460	18.3	21,531	22.2	22,724	24.6
8,238	17.4	9,169	19.2	9,252	21.4	9,266	23.7
3,066	55.1	3,111	55.5	2,970	56.0	2,869	59.7
52,236	33.3	54,913	34.8	54,193	36.4	52,213	38.7
135,455	16.4	145,035	19.8	153,783	23.6	163,274	26.4
19,249	40.5	21,282	41.5	23,221	44.3	25,401	46.9
5,039	19.0	5,664	19.8	6,426	23.9	7,224	25.8
168,749	73.3	156,528	72.8	145,398	72.2	137,742	72.5
47,303	2.2	46,717	3.2	49,677	4.5	56,009	6.7
41,061	61.9	42,371	60.9	42,102	61.3	41,033	62.0
18,172	77.0	15,587	76.4	14,302	76.2	13,008	76.1
49,476	77.8	54,339	78.8	57,845	79.2	60,031	80.6
16,873	96.0	17,523	95.9	17,567	95.9	17,737	95.6
436	14.2	531	18.8	559	27.5	653	28.6
57,933	57.3	52,292	56.9	47,502	56.7	44,733	22.5
1,069	92.5	843	93.1	781	90.9	693	88.4
18,346	42.0	16,085	40.7	14,303	41.6	12,701	41.3
390	0	1,206	0.2	992	.3	386	2.3
20,896	18.4	21,559	19.2	22,618	20.1	23,175	21.5
51,436	52.7	50,363	54.4	47,794	56.7	45,057	58.9
28,597	45.6	33,592	43.7	36,745	45.1	37,685	49.6
136,773	37.4	127,936	37.9	118,322	39.4	114,184	40.6
4,818	27.4	5,537	27.3	6,136	25.7	6,344	24.1
28,479	42.2	32,800	45.0	34,237	47.0	36,059	47.2

Appendix B.--Percentage of women among master's degree

Discipline division	1971-72		1972-73		1973-74	
	Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women
All discipline divisions	252,774	40.6	264,525	41.4	278,259	43.1
Agriculture and natural resources	2,691	7.1	2,822	7.9	2,939	9.8
Architecture and environmental design	1,928	14.6	2,319	15.7	2,733	18.4
Area studies	978	40.7	1,032	37.0	1,142	38.9
Biological sciences	6,126	33.1	6,294	30.6	6,581	30.6
Business and management	30,511	3.9	31,239	4.9	32,820	6.6
Communications	2,200	34.4	2,406	35.7	2,642	36.8
Computer and information sciences	1,977	11.4	2,113	10.6	2,276	12.9
Education	98,280	57.3	105,646	58.2	112,739	59.9
Engineering	16,966	1.6	16,632	1.7	15,385	2.3
Fine and applied arts	7,540	46.3	7,254	44.8	8,001	45.9
Foreign languages	4,640	65.1	4,323	64.3	3,991	66.1
Health professions	7,361	56.4	8,504	57.5	9,741	60.2
Home economics	1,666	92.7	1,679	90.7	1,869	91.1
Law	932	5.8	1,071	7.5	1,181	7.1
Letters	12,759	57.7	12,384	57.1	12,165	56.6
Library science	7,435	79.9	7,743	78.1	8,185	77.8
Mathematics	5,209	29.8	5,033	29.9	4,840	31.0
Military science	2	0	0	0	0	0
Physical sciences	6,307	14.1	6,274	13.5	6,087	14.6
Psychology	5,293	38.4	5,882	40.2	6,616	39.8
Public affairs and services	9,608	47.0	11,190	46.7	12,694	45.3
Social sciences	17,469	28.2	17,361	27.6	17,297	28.8
Theology	2,755	23.4	2,778	26.7	2,898	27.2
Interdisciplinary studies	2,143	39.2	2,546	45.6	3,437	45.8

recipients, by discipline division: 1971-72 through 1977-78

1974-75		1975-76		1976-77		1977-78	
Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women	Total master's degrees awarded	Percent awarded to women
293,651	44.8	313,001	46.4	318,241	47.1	312,816	48.3
3,076	11.8	3,351	14.3	3,735	14.6	4,036	18.7
2,953	20.3	3,215	20.8	3,219	22.5	3,121	26.0
1,140	43.2	945	45.3	989	46.9	925	47.8
6,591	30.0	6,621	31.8	7,154	33.8	6,851	35.5
36,450	8.4	42,728	11.6	46,650	14.3	48,661	16.9
2,796	42.1	3,128	41.8	3,092	44.4	3,297	49.2
2,299	14.7	2,603	14.5	2,798	16.7	3,038	18.7
120,233	62.2	128,410	64.3	126,730	65.8	118,957	67.7
15,359	2.4	16,349	3.6	16,251	4.4	16,409	5.3
8,363	46.8	8,820	48.9	8,638	51.2	9,036	52.1
3,826	66.9	3,541	66.7	3,178	69.5	2,741	70.8
10,842	61.8	12,696	66.5	13,092	67.9	14,483	70.3
1,901	89.3	2,187	91.5	2,340	91.1	2,613	91.9
1,245	8.0	1,442	12.0	1,574	13.2	1,786	14.6
11,873	58.8	11,356	58.3	10,495	59.5	10,062	61.8
8,123	78.8	8,084	78.3	7,592	79.6	6,935	80.0
4,338	32.9	3,863	34.0	3,698	35.1	3,383	44.0
0	0	0	0	43	0	45	2.2
5,830	14.5	5,485	15.0	5,345	16.6	5,576	17.0
7,104	42.9	7,859	46.7	8,320	48.1	8,194	52.0
15,505	44.6	17,333	45.3	19,696	45.5	20,191	47.9
16,942	30.0	15,902	31.6	15,489	32.9	14,660	33.2
3,230	30.9	3,292	32.1	3,625	31.4	3,329	30.5
3,632	47.7	3,791	46.5	4,498	37.1	4,487	37.5

Appendix C.--Percentage of women among doctoral degree

Discipline division	1971-72		1972-73		1973-74	
	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women
All discipline divisions	33,369	14.3	34,790	15.8	33,826	.1
Agriculture and natural resources	971	2.7	1,059	2.6	930	3.6
Architecture and environmental design	50	14.0	58	6.9	69	5.8
Area studies	159	18.2	165	29.1	163	27.6
Biological sciences	3,654	17.0	3,637	19.5	3,440	20.3
Business and management	902	2.2	932	5.7	983	5.1
Communications	111	13.5	139	18.0	175	16.6
Computer and information sciences	167	7.2	196	7.7	198	4.6
Education	7,041	23.6	7,314	24.8	7,293	27.1
Engineering	3,671	0.6	3,492	1.5	3,312	1.7
Fine and applied arts	572	25.2	616	27.1	585	24.8
Foreign languages	841	37.5	991	40.3	923	43.7
Health professions	442	18.1	646	25.0	578	22.7
Home economics	104	71.2	165	75.8	136	66.2
Law	40	2.5	37	2.7	27	3.7
Letters	2,589	27.2	2,754	30.1	2,633	32.1
Library science	64	43.8	102	41.2	60	40.0
Mathematics	1,128	7.9	1,068	9.6	1,031	9.7
Physical sciences	4,103	6.7	4,016	6.9	3,631	7.0
Psychology	1,881	24.8	2,089	29.0	2,339	29.5
Public affairs and services	211	21.8	219	19.2	230	22.2
Social sciences	4,079	14.7	4,230	15.6	4,126	18.0
Theology	441	4.8	666	3.3	768	2.9
Interdisciplinary studies	148	14.9	199	17.1	196	26.0

recipients, by discipline division: 1971-72 through 1977-78

1974-75		1975-76		1976-77		1977-78	
Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women
34,086	21.3	34,076	22.9	33,244	24.3	32,156	26.4
991	3.3	928	6.6	893	6.9	971	6.4
69	15.9	82	15.9	73	15.1	73	21.9
166	22.9	182	31.9	153	32.0	145	31.0
3,384	22.0	3,397	21.5	3,403	21.4	3,313	24.2
1,011	4.1	956	5.4	869	6.3	867	8.3
165	27.9	204	24.5	171	24.0	191	27.7
213	6.6	244	9.4	216	8.8	191	7.7
7,443	30.9	7,769	33.4	7,955	34.8	7,586	39.0
3,108	2.1	2,821	2.3	2,586	2.8	2,440	2.3
649	31.3	620	27.9	662	32.5	708	36.7
857	47.0	864	47.9	752	51.5	649	54.7
618	28.6	577	28.8	538	32.0	654	38.5
156	67.3	178	71.3	160	77.0	203	71.4
21	0	76	3.9	60	13.3	39	12.8
2,498	34.0	2,452	36.5	2,202	38.2	2,076	39.2
56	41.1	71	45.0	75	53.3	67	35.8
975	11.3	856	11.0	823	13.2	805	15.4
3,628	8.3	3,433	8.7	3,344	9.6	3,137	11.0
2,442	30.9	2,581	31.7	2,761	35.9	2,597	37.4
285	24.2	319	32.0	335	32.8	395	32.4
4,209	20.8	4,160	21.6	3,784	22.1	3,583	24.3
872	3.8	1,033	4.1	1,125	2.8	1,160	4.7
270	27.4	273	32.2	304	30.6	301	46.8

Appendix D.--Percentage of women among first-professional degree

Field of Study	1971-72		1972-73		1973-74	
	Total first professional degrees awarded	Percent awarded to women	Total first professional degrees awarded	Percent awarded to women	Total first professional degrees awarded	Percent awarded to women
Total	43,774	6.3	50,435	7.1	54,278	9.9
Chiropractic (D.C.)	---	---	---	---	---	---
Dentistry (D.D.S. or D.M.D.)	3,894	1.2	4,086	1.4	4,478	2.0
Law, general (L.L.B. or J.D.)	22,017	7.2	27,484	8.1	29,652	11.5
Medicine (M.D.)	9,331	9.0	10,398	9.0	11,447	11.2
Optometry (O.D.)	670	2.2	771	2.6	791	4.2
Osteopathic medicine (D.O.)	484	3.5	523	2.9	685	2.8
Pharmacy (D. Pharm.)	---	---	---	---	---	---
Podiatry or podiatric medicine (Pod. D.)	279	0.3	278	1.3	371	1.1
Theological professions, general	5,568	1.9	5,291	3.4	5,048	5.5
Veterinary medicine (D.V.M.)	1,247	9.4	1,299	10.2	1,384	11.2
Other	284	20.8	305	11.8	422	26.1

Note: Absence of data is denoted by ---.

recipients, by field of study: 1971-72 through 1977-78

1974-75		1975-76		1976-77		1977-78	
Total first professional degrees awarded	Percent awarded to women	Total first professional degrees awarded	Percent awarded to women	Total first professional degrees awarded	Percent awarded to women	Total first professional degrees awarded	Percent awarded to women
56,259	12.5	63,061	15.6	64,807	18.7	66,964	21.5
---	---	1,577	9.3	1,368	8.5	1,661	10.0
4,809	3.1	5,478	4.5	5,187	7.4	5,238	11.2
29,497	15.1	32,535	19.2	34,390	22.5	34,616	26.0
12,550	13.2	13,540	16.2	13,574	19.2	14,399	21.5
792	5.0	975	7.7	953	11.0	1,014	13.1
665	5.3	818	7.2	852	8.8	944	12.5
---	---	439	29.6	527	27.5	547	30.2
351	1.1	428	2.6	486	3.3	543	4.8
5,098	6.8	5,709	7.6	5,861	9.5	6,367	11.3
1,415	15.9	1,532	18.1	1,586	22.8	1,635	24.5
1,082	11.0	30	10.0	23	47.8	---	---

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